

REMARKS/ARGUMENTS

This Amendment is in response to the Office Action mailed June 22, 2007. Claims 1-23 were pending in the present application. This Amendment amends claims 1, 2, 8, and 14, leaving pending in the application claims 1-23. Reconsideration of the rejected claims is respectfully requested.

35 U.S.C. §103(a) Rejection of Claims 1-3, 6-11, 14-17, and 20

Claims 1-3, 6-11, 14-17, and 20 are rejected under 35 U.S.C. §103(a) as being unpatentable over Oka (U.S. Patent No. 7,102,639, hereinafter "Oka"). Applicant respectfully submits that Oka does not teach or suggest the features of these claims.

Embodiments of the present invention relate to techniques for specifying scene data for computer animation according to a user-defined purpose for the animation.

In the prior art, an animation scene is typically described by a scene descriptor file. This file contains information about the model objects, camera angles, lighting sources, *etc.* within the scene. Most commonly, a scene descriptor file is loaded into memory, and the data specified in the file is subsequently used to render the scene. A scene may be rendered for any number of user-defined reasons, including determining if the lighting is aesthetically pleasing, determining whether the colors and textures match, reviewing the visual arrangement or composition, creating a final rendering, and the like. (Specification: para. 8).

A problem discussed in the Background of the present disclosure occurs when an animation scene become very complex. In this case, the scene descriptor file may contain so many detailed objects that it is too large to fit within the memory space of an animator's computer. Even if the computer has sufficient memory, animators may have to wait an undesirably long time for the scene objects to be retrieved from storage, and for the corresponding scene to be rendered. (Specification: para. 9).

Embodiments of the present invention address the foregoing problem and other such problems by allowing multiple representations (or versions) of an object to be referenced in a scene descriptor file. Each representation is associated with a user-defined purpose for

rendering the scene (e.g., previewing lighting, etc.). When a rendering option corresponding to a specific user-defined purpose is selected, the appropriate representation of the object is loaded and rendered. For example, if a scene is rendered to preview lighting, all of the light objects may be rendered, but model objects may be omitted. In this manner, the problems associated with rendering the entirety of a large, complex scene may be avoided. (Specification: para. 158; figs. 2A and 2B).

In accordance with the above, Applicant's claim 1, as amended, recites:

A method for rendering a frame of animation in a computer system having a computer memory, the method comprising:

retrieving scene descriptor data associated with the frame of animation, wherein the scene descriptor data includes a first specification of at least one object, the first specification being associated with a first user-defined purpose for rendering the frame of animation, and wherein the scene descriptor data includes a second specification of the at least one object, the second specification being associated with a second user-defined purpose for rendering the frame of animation;

receiving a selection of a first rendering option corresponding to the first user-defined purpose or a second rendering option corresponding to the second user-defined purpose;

querying a database external to the computer system for a first representation of the one object in response to the first specification of the object when the selection is of the first rendering option;

receiving the first representation of the object from the database external to the computer system when the selection is of the first rendering option;

loading the first representation of the object into the computer memory when the selection is of the first rendering option; and

rendering the object for the frame of animation using the first representation of the object when the selection is of the first rendering option;

wherein the first representation of the object is not loaded into the computer memory when the selection is of the second rendering option.

(Applicant's claim 1, as amended, emphasis added).

Applicant submits that at least the above features are not taught or suggested by Oka.

Oka is directed to a method for rendering an object image at varying levels of detail based on an attribute of the object image. (Oka: col. 2, lines 10-21). "The attribute of the

object image is, for example, a depth distance from a view point of the object image, or an apparent speed of the object image on the screen.” (Oka: col. 2, lines 22-24). As shown in Fig. 8 of Oka, an object image (*e.g.*, the depicted house) may move across a display screen at varying speeds from frame 0 to frame 3. In this example, the object image is rendered at a high or low level of detail (LOD) in accordance with its speed at a particular frame. (*See* Oka: Fig. 9).

Applicants submit that the invention of Oka is substantially different from the claimed embodiments of the present invention. For example, Oka does not teach or suggest scene descriptor data that includes first and second specifications of an object, wherein “the first specification [is] associated with a first user-defined purpose for rendering the frame of animation,” and wherein “the second specification [is] associated with a second user-defined purpose for rendering the frame of animation” as recited in amended claim 1. (Emphasis added).

As described above, Oka merely teaches rendering a high LOD or low LOD representation of an object image according to an attribute of the object image (*e.g.*, the speed of the object image at a particular point in time). Oka makes no reference to any type of association between the LOD representations of an object and user-defined purposes for rendering the scene as a whole. In contrast, amended claim 1 specifically recites first and second specifications of an object, wherein “the first specification [is] associated with a first user-defined purpose for rendering the frame of animation,” and wherein “the second specification [is] associated with a second user-defined purpose for rendering the frame of animation.” (Emphasis added). Accordingly, Oka fails to teach or suggest at least this aspect of claim 1.

Further, since Oka does not teach anything about representations of an object associated with first and second user-defined purposes for rendering a frame of animation, Oka necessarily fails to teach or suggest “receiving a selection of a first rendering option corresponding to the first user-defined purpose or a second rendering option corresponding to the second user-defined purpose” as recited in amended claim 1.

For at least the foregoing reasons, Applicant respectfully submits that Oka does not anticipate or render obvious Applicant’s claim 1, and request that the rejection of claim 1 be withdrawn.

Independent claims 8 and 14 have been amended to recite features that are substantially similar to independent claim 1. Accordingly, claims 8 and 14 are believed to be allowable for at least a similar rationale as discussed for claim 1, and others.

Dependent claims 2, 3, 6, 7, 9-11, 15-17, and 20 depend (either directly or indirectly) from independent claims 1, 8, and 14 respectively, and are thus believed to be allowable for at least a similar rationale as discussed for claims 1, 8, and 14, and others.

35 U.S.C. §103(a) Rejection of Claims 4, 12, 18, and 22

Claims 4, 12, 18, and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oka in view of Harvill et al. (U.S. Patent No. 6,559,845, hereinafter "Harvill"). Applicant respectfully submits that Oka and Harvill, considered individually or in combination, do not teach or suggest the features of these claims.

Claims 4, 12, 18, and 22 depend (either directly or indirectly) from independent claims 1, 8, and 14 respectively, and the rejection of claims 4, 12, 18, and 22 is premised on the assertion that Oka discloses the features recited in claims 1, 8, and 14, and Harvill discloses the remaining features of claims 4, 12, 18, and 22.

As discussed above, however, Oka does not disclose or suggest all of the features recited in independent claims 1, 8, and 14. As best understood, Harvill does not provide any teaching or suggestion that would remedy these deficiencies. Accordingly, Applicant submits that even if Oka were combined with Harvill (although there appears to be no motivation to combine), the resultant combination would not teach or suggest the various features recited in claims 4, 12, 18, and 22. Further, Applicant submits that claims 4, 12, 18, and 22 recite additional features which are not disclosed or suggested by Oka or Harvill, considered individually or in combination, and are thus patentable for additional reasons.

35 U.S.C. §103(a) Rejection of Claims 5, 13, 19, and 23

Claims 5, 13, 19, and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oka in view of Gagne (US Patent No. 6,353,437, hereinafter "Gagne").

Applicant respectfully submits that Oka and Gagne, considered individually or in combination, do not teach or suggest the features of these claims.

Claims 5, 13, 19, and 23 depend (either directly or indirectly) from independent claims 1, 8, and 14 respectively, and the rejection of claims 5, 13, 19, and 23 is premised on the assertion that Oka discloses the features recited in claims 1, 8, and 14, and Gagne discloses the remaining features of claims 5, 13, 19, and 23.

As discussed above, however, Oka does not disclose or suggest all of the features recited in independent claims 1, 8, and 14. As best understood, Gagne does not provide any teaching or suggestion that would remedy these deficiencies. Accordingly, Applicant submits that even if Oka were combined with Gagne (although there appears to be no motivation to combine), the resultant combination would not teach or suggest the various features recited in claims 5, 13, 19, and 23. Further, Applicant submits that claims 5, 13, 19, and 23 recite additional features which are not disclosed or suggested by Oka or Gagne, considered individually or in combination, and are thus patentable for additional reasons.

CONCLUSION

In view of the foregoing, Applicant believes all claims now pending in this Application are in condition for allowance. The issuance of a formal Notice of Allowance at an early date is respectfully requested.

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 650-326-2400.

Respectfully submitted,

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